Brit. J. vener. Dis. (1974) **50,** 323

Abstracts

These selected abstracts and titles from the world literature are arranged in the following sections:

Syphilis and other treponematoses (*Clinical and therapy*)

Acquired Syphilis in Three Patients with Congenital Syphilis

FIUMARA, N. J. (1974) *New Engl. J. Med.*, **290,** 1119

Immunity to re-infection with syphilis is largely dependent on the duration of the original infection. Re-infections are almost exclusively seen in patients who have been treated for primary or secondary syphilis, that is, at a stage when immunity has not had time to develop. This report describes three patients with multiple stigmata of congenital syphilis who had been re-infected, two with secondary and one with darkground positive primary syphilis. All had strongly positive Hinton tests for antilipoidal antibody, the titres being considerably higher than when their congenital infections had first been diagnosed 2 to 13 years previously. Two had a vague history suggesting possible antisyphilitic treatment in childhood. These unusual cases show that immunity to syphilis may wane with the passage of time.

Current concepts of immunity in syphilis are briefly discussed.

A. E. Wilkinson

(Reprinted from *Abstracts on Hygiene*, by permission of the Editor.)

The Problem of Maternal Syphilis after Serologic Surveillance during Pregnancy

MONIF, G. R. G., WILLIAMS, B. R., JR., SHULMAN, S. T., and BAER, H. (1973) *Amer. J. Obstet. Gynec.*, **117,** 268

The authors were alerted by the occurrence of congenital syphilis in a 9-week-old infant, whose mother had attended the antenatal clinic of their unit, her initial screening tests for syphilis having been negative.

Consequently from September 1, 1969, they carried out additional screening tests, *i.e.* RPR, in antenatal patients who remained under their care for longer than 90 days from the initial screening tests. Out of 1,000 consecutive cases, two cases of congenital syphilis were reported, in one of which death occurred *in utero* 7 days before parturition. Both of these had specific IgM antibodies when the FTA-ABS test was carried out on cord blood at birth.

The fact that two out of 1,000 pregnant women developed syphilis during the course of pregnancy, after initially negative screening tests, might be a coincidence with no true epidemiological significance. Nevertheless, the authors conclude: 'Serious thought should be given to screening mothers before or at parturition for evidence of infection with *Treponema pallidum*'.

[This would certainly apply in environments where there was a relatively high incidence of syphilis in the community.]

J. D. H. Mahony

Syphilis in Pregnancy: Transplacental Infection

BELLINGHAM, F. R. (1973) *Med. J. Aust.*, **2,** 647

The author describes two cases of foetal loss in 1972 due to transplacental syphilitic infection in patients in whom routine screening tests in early pregnancy had been negative.

The first of these occurred in a 22-year-old girl, whose VDRL and RPR had been negative when she booked for confinement at the Women's Hospital, Crown Street, Sydney, at 14 weeks' gestation. At 36 weeks she went into spontaneous labour and gave birth to a macerated foetus. CWR, VDRL, FTA-ABS, and TPI tests were then carried out in the mother, and were all positive. This girl was unmarried and gave a history of treatment for gonorrhoea in 1968.

The second report concerned an 18-year-old girl whose tests were negative in June, 1972, at her initial booking for confinement at St Margaret's Hospital, Sydney, at 12 weeks' gestation. After a supervised pregnancy which was complicated by pre-eclampsia and a coliform urinary infection, she gave birth by forceps delivery to an apparently normal infant on January 5, 1973. Mother and child were discharged home 4 days later. The infant was re-admitted on the 20th day of post-natal life with pyrexia, diarrhoea, hepatosplenomegaly, and 'napkin-rash', and died suddenly 15 hours later. Serological testing of the mother and father of the infant now revealed that both had positive tests for syphilis, including FTA-ABS and TPI. This mother had married during the ante-natal period and had been treated by a dermatologist for scabies a month after her initial booking.

The mothers of both these infants had been regular attenders at the antenatal clinics and the author suggests

that a higher index of suspicion on the part of the clinicians might have led to the clinical diagnosis of syphilis during the antenatal period. He agrees with King and Nicol that the initial screening tests for syphilis in early pregnancy should be supplemented by further tests nearer term. When resources are limited he suggests that this routine could be reserved for patients 'at risk' such as the unmarried and those with a past history of venereal disease.

In 1972, at the Women's Hospital, Sydney, 78 out of 3,402 (2·3 per cent.) of antenatal patients showed reactive screening tests for syphilis. 64 of these tests (1·9 per cent.) proved to be biological false positive reactions. The corresponding figures at St Margaret's Hospital were 1·2 and 0·9 per cent. respectively. The incidence of previously undiagnosed syphilis was approximately three per 1,000 for both hospitals.

J. D. H. Mahony

Atypical Primary Syphilitic Lesions on the Penis NOTOWICZ, A., and MENKE, H. E. (1973) *Dermatologica (Basel)*, **147**, 328

Single Syphilids simulating Mycosis caused by *Trichophyton rubrum* RUKAVISHNIKOVA, V. M., and GRACHEVA, G. K. (1974) *Vestn. Derm. Vener.*, No. 5, p. 87

Re-infection with Syphilis after Treatment with Antibiotics and Bismuth Drugs VASILIEV, T. V., VINOKUROV, I. N., and RAKHMANOVA, N. V. (1974) *Vestn. Derm. Vener.*, No. 5, p. 53

Prodigiosan in the Composite Therapy of Patients with Contagious Syphilis VASILIEV, T. V., KAGAN, M. Z., NOVIKOVA, S. I., and KLEVTSOVA, G. I. (1974) *Vestn. Derm. Vener.*, No. 4, p. 51

Unpublished Works of Russian Physicians of the XVIII and XIX Centuries on Syphilology GUSAKOV, N. I. (1974) *Vestn. Derm. Vener.*, No. 4, p. 63

Syphilis (*Serology and biological false positive phenomenon*)

Biologic False-positive Reactions in Serologic Tests for Syphilis in Narcotic Addiction. Reduced Incidence during Methadone Maintenance Treatment
CUSHMAN, P., and SHERMAN, C. (1974) *Amer. J. clin. Path.*, **61**, 346

69 narcotic addicts attending a methadone maintenance clinic for 8 to 76 months after starting treatment were studied. Initially 24 had reactive VDRL tests. In eight the FTA test was also positive, suggesting that these patients had syphilis. In sixteen the FTA test was negative, giving an incidence of 23 per cent. BFP reactions among the addicts compared with 0·7 per cent. such reactions in a control group of 875 blood donors.

No correlation was found between the results of liver function tests or changes in immunoglobulin levels in the patients with or without BFP reactions. On re-examination during methadone treatment twelve of the original sixteen BFP reactors were found to have become VDRL-negative on at least two occasions. No correlation was found between this loss of VDRL reactivity and changes in the serum IgM level, liver function tests, incidence of positive latex-fixation tests, and dose or duration of treatment with methadone.

The cause of BFP reactions in narcotic addicts is not known, although it has been attributed to viral hepatitis. Radioimmunoassay tests for HAA were carried out on sera from 52 of the patients treated with methadone. It was positive in six, but in none of five patients with BFP reactions who were tested. *A. E. Wilkinson*

[Reprinted from *Abstracts on Hygiene*, by permission of the Editor.]

Early-Warning Test for Syphilis
KAUFMAN, R. E., FEELEY, J. C., and REYNOLDS, G. H. (1974) *Lancet*, **1**, 163

The authors state that it is a policy in many Venereal Disease clinics in the USA to treat epidemiologically *all* contacts and suspected contacts of patients exposed to an individual with infectious syphilis, in spite of the fact that it is believed that only about one-third of recently exposed individuals will develop the disease. They sought, therefore, to evaluate an 'early-warning test' for syphilis so that epidemiological treatment might be more specifically directed. Experimental evidence suggested that the IgM-FTA test would be the best for the purpose.

Consequently, 23 patients with a history of 'well-defined exposure' were subjected to a battery of tests: VDRL, automated reagin test (ART), automated TPHA, standard FTA-ABS, FTA-IgM, and FTA-IgG tests. All tests were repeated twelve times within 60 days.

Surprisingly no statistically significant difference emerged between these tests as early-warning devices. Meanwhile the FTA-IgM should not be relied upon for this purpose, and further research is warranted.

J. D. H. Mahony

Significance of the Fluorescent Treponemal Antibody (FTA-ABS) Test in Collagen Disorders and Leprosy WRIGHT, D. J. M. (1973) *J. clin. Path.*, **26**, 968

A test is described to distinguish the immunofluorescence seen on *T. pallidum* in syphilis from that due to DNA antibodies, as found in collagen disorders. Sera were studied from 278 lepromatous patients, syphilitic patients, those with collagen disorder, and normal subjects. Immunofluorescence was carried out according to the National Communicable Disease Centre 'Manual of Serology' (1969), except that sera were not pre-heated to 56°C. Fresh treponemes were used for the FTA-ABS; and reconstituted lyophilized *Trypanosoma cruzi* and *Toxoplasma gondii* (R strain) for the other immunofluorescence tests. Further tests were also done using organisms pretreated with deoxyribonuclease.

Of 123 patients with collagen disease, eleven had a positive FTA-ABS, of whom five had positive confirmatory tests for syphilis. Three out of the remaining six sera showed a beaded fluorescence, which was not found on all treponemes in the preparation. Five of the six sera not confirmed for syphilis gave fluorescence with the *T. cruzi* and *T.*

gondii preparations. Nine FTA-ABS positive sera were tested against treponemes and protozoa pre-treated with DNA-ase, and in four of these fluorescence was lost. The remaining five all had positive confirmatory tests for syphilis.

A case of Sjøgren's syndrome with a positive FTA-ABS is described, as a first report. It appears, however, that confirmatory tests for syphilis were also positive in this patient.

The sera of 95 patients with lepromatous leprosy were also studied. Fourteen patients had a positive FTA-ABS, none of whom lost their fluorescence with pre-treated treponemes, or reacted at all with the protozoa. These sera also had positive TPHA. It is concluded that the sera contain specific antitreponemal antibodies probably due to yaws, which is endemic in the area the sera came from.

The discussion makes the point that as concurrent infections with *T. cruzi*, *T. gondii*, and treponemes is very unlikely, the loss of fluorescence with DNA-ase-treated organisms demonstrates that cross-reaction is probably due to anti-DNA antibodies in patients with collagen disease. [It may be asked why, in a study such as this, it was not considered necessary to inactivate sera before testing.]

G. L. Ridgway

On the Study of the Blood Morphology in Subjects with Biological False Positive Reactions for Syphilis
TEMIRGALEEV, S. A., and VOSKRESENSKAYA, G. A. (1974) *Vestn. Derm. Vener.*, No. 5, p. 57

Sensitivity of Immunofluorescence, Kolmer, and Standard Serological Tests in Early Syphilis
BEDNOVA, V. N., STOYANOVA, O. A., and RAKHMANOVA, N. V. (1974) *Vestn. Derm. Vener.*, No. 4, p. 57

Results obtained with Electrosyneresis in the Serological Diagnosis of Syphilis
MORSICA, R., and BERTI, G. (1974) *G. ital. Derm.*, **109,** 156

Syphilis (*Pathology and experimental*)

Effects of Passive Immunization on Experimental Syphilis in the Rabbit TURNER, T. B., HARDY, P. H., NEWMAN, B., and NELL, E. E. (1973) *Johns Hopk. med. J.*, **133,** 241

The serum used for immunization was a pool from untreated syphilitic rabbits with infections of 6 to 18 months' duration. Volumes of 10 ml./kg. were given intravenously or of 25 to 50 ml./kg. intraperitoneally to groups of eight or twelve rabbits from one day before to 8 days after challenge with 500 *T. pallidum* injected intradermally at each of four to six sites on the shaved skin of the back. Half the animals received similar doses of normal serum. The results were assessed on differences in the length of the incubation period and the number and severity of the lesions on the 14th or 21st day after challenge.

In eight experiments, lesions developed in both immunized and control animals, but partial protection was achieved in those which received immune serum. This was shown by lengthening of the incubation period, attenuation of the lesions with more rapid healing, and a lower incidence of metastatic testicular lesions compared with the findings in the animals given normal serum. The incubation period was longer in animals given immune serum the day before challenge than in those treated immediately before or after challenge. Later events were influenced more by the amount of serum than the time at which it was given. These differences may be affected by the relative amounts of intravascular and extravascular antibody.

The authors conclude that while humoral antibodies have a protective effect, other immune mechanisms also play a major part in the host's defences. *A. E. Wilkinson*

Vaccines for Syphilis
(1974) *Brit. med. J.*, **2,** 346 (leader)

Gonorrhoea

Asymptomatic Gonorrhoea in Men: Diagnosis, Natural Course, Prevalence, and Significance
HANDSFIELD, H. H., LIPMAN, T. O., HARNISCH, J. P., TRONCA, E., and HOLMES, K. K. (1974) *New Engl. J. Med.*, **290,** 117

Urethral infections were detected in sixteen men out of forty asymptomatic male contacts of women with either disseminated gonorrhoea or salpingitis who were patients in Seattle, Washington. During the 18 months' investigation, 33 other men with no symptoms attended the clinic for a check-up and were found to be infected, making a total of 49 asymptomatic men. Of these, 55 per cent. were known to have been treated or had urethral symptoms during a median period of 11 months.

Culture was more sensitive than fluorescent antibody or Gram-stained smears in detecting asymptomatic genital infection in men. *Neisseria gonorrhoeae* was detected more often in the anterior urethra than in the prostatic secretions by all three methods.

Among the 28 asymptomatically infected men followed without treatment for 7 to 165 days, eighteen remained carriers of gonorrhoea. Although this is a wide range, the observed duration of infection was a median of only 14 days. Of the other ten, five developed symptoms in a median of 10 days and five underwent a spontaneous cure in a median of 3 days. [It can scarcely be claimed that these short median periods of observation reveal the natural course of the disease.]

The paper then turns to two other populations, 2,241 servicemen who had returned from active service in Vietnam during the previous 24 hours and 832 men and women who administered the transit centre through which they passed. Of 2,628 men at risk, 2·2 per cent. were found to be infected with gonorrhoea and 1 per cent. were without symptoms or signs. The prevalance of asymptomatic infection among the centre personnel was 1·6 per cent. of males and 0·4 per cent. of females. These screening operations revealed infections of which 68 per cent. were asymptomatic. [Where facilities are available for patients with symptoms to obtain prompt treatment any screening procedure is always likely

to detect more asymptomatic than symptomatic cases.]

The authors conclude that asymptomatically infected men constitute a definite reservoir of *N. gonorrhoeae* and that a major factor in the current gonorrhoea pandemic is the failure of physicians to identify and treat male contacts of women with proved gonorrhoea. [This is lightweight evidence to establish a new or previously undiscovered major epidemiological factor. In view of the high proportion of asymptomatic male cases with fairly recent symptomatic or treated gonorrhoea, it might be just as valid and aid control even more to enjoin physicians to improve their identification of infection in asymptomatic female contacts.] *W. F. Felton*

Spread of Gonococcal Pharyngitis to the Genitals EVRARD, J. R. (1973) *Amer. J. Obstet. Gynec.*, **117,** 856

A negro couple is described in which the male partner had urethral gonorrhoea adequately treated three times in as many months, during which time his consort was found to have, firstly gonococcal salpingitis, then a month later gonococcal cervicitis, and a month after that asymptomatic pharyngeal gonorrhoea, having admitted to fellatio. On all three occasions appropriate antibiotic therapy had been given.

In all instances, *N. gonorrhoeae* was identified by the oxidase reaction and confirmed by sugar fermentation and immunofluorescent techniques. The author emphasizes the need for negative pharyngeal as well as cervical and rectal cultures to establish cure.

[The author presumed that the couple were telling the truth when they denied any sexual contact outside their union in this series of 'ping-pong' infections.] *M. A. Waugh*

Gonorrhoea Today WENDEL, R. G. (1974) *J. Urol. (Baltimore)*, **111,** 374

Gonococcal Disease LIGHTFOOT, R. W., JR., and GOTSCHLICH, E. C. (1974) *Amer. J. Med.*, **56,** 347

Cervical Cancer and Gonorrhoea: Chance or Causal Association? GERDTS, E. (1974) *T. norske Laegeforen.*, **30,** 574 (Eng. abstr. p. 586)

Gonorrhoea of the Pharynx (1974) *Brit. med. J.*, **2,** 239 (Leader)

Gonorrhoea of the Pharynx ROBINSON, D. K. (1974) *Brit. med. J.*, **2,** 500 (Letter)

Gonococcal Infections in Infants and Children. Lessons from Fifteen Cases ALLUE, X., RUBIO, T., and RILEY, H. D., JR. (1973) *Clin. Pediat. (Philad.)*, **12,** 584

Gonorrhoea (*Microbiology*)

Immunofluorescence in the Diagnosis of Gonorrhoea THIN, R. N. T., GREEN, F., and NICOL, C. S. (1974) *J. roy. Army med. Cps*, **120,** 48

A direct immunofluorescent (IF) staining method was used to demonstrate *Neisseria gonorrhoeae* in smears of patients' secretions. This method and Gram-stained smears and cultures were used to investigate soldiers presenting with urethritis, and 106 out of 184 men were diagnosed by one or more methods as suffering from gonorrhoea. Results of IF tests alone were positive in two cases but they were negative in three cases which had positive results by Gram-stained smears and cultures. It is concluded that direct IF-stained smears are less valuable in the diagnosis of gonorrhoea in men than in women. The IF technique was also used to investigate prostatic secretion 3 months after treatment for gonococcal urethritis.

Immunofluorescent tests were helpful in the investigation of female contacts of servicemen who had recently had gonorrhoea. Five out of fourteen such women had positive results by IF-stained smears alone.

There were no difficulties in starting the technique in Singapore and it is considered that it was as satisfactory there as it had been in London.

Authors' summary

Multiple Antibiotic Resistance due to a Single Mutation in *Neisseria gonorrhoeae* MANESS, M. J., and SPARLING, P. F. (1973) *J. infect. Dis.*, **128,** 321

Many authors have noticed that strains of gonococci resistant to one antibiotic are frequently resistant to a number, though resistance may only be low. The antibiotics most commonly involved are penicillin, tetracycline, erythromycin, streptomycin, chloramphenicol, fusidic acid, and rifampicin, and since these drugs are chemically dissimilar and have different sites of action, it is unlikely that a single change in site or the production of a single enzyme could account for resistance to them all. Likewise, it seems unlikely that so many independent mutations to resistance could occur and the authors postulate that in some strains there is a common genetic basis for resistance to multiple drugs.

The strains used included twenty from collections and 147 collected locally during 1971. Minimum inhibitory concentrations of penicillin, tetracycline, doxycycline, erythromycin, chloramphenicol, and streptomycin were determined by the plate-dilution method for the 147 local strains, and of spectinomycin, acridine orange, and ethidium bromide for 29 of these. There was a significant positive correlation between the sensitivities of almost all possible pairs of these drugs except acridine orange-streptomycin and ethidium bromide-streptomycin. Two types of resistance to streptomycin were seen: low level (MIC 8-64 μg./ml.) and high level (MIC >1000 μg./ml.). Both were correlated with resistance to penicillin, tetracycline, and chloramphenicol. Strains showing high level resistance to streptomycin were either resistant or super-sensitive to erythromycin, but strains showing only moderate resistance to erythromycin were sensitive to streptomycin. On the premise that if *R* factors carrying multiple resistance were present they would be unstable, loss of resistance was tested for by replica-plating from plates containing 50–200 colonies to plates containing no drug or ¼ or ½ the MIC for the strain concerned. Any colonies failing to grow on antibiotic-containing medium were then tested against all antibiotics. Loss of resistance to six drugs was seen (but never

that to streptomycin). Multiple resistance of the original pattern was then restored by selecting spontaneous or ultraviolet-induced mutations to resistance to either penicillin, eythromycin, tetracycline, or chloramphenicol.

As spontaneous mutations rarely affect more than one gene, the authors conclude that resistance to chemically and biologically dissimilar drugs is due to the mutation of a single gene. They suggest that this affects the permeability properties of the cell envelope and discuss the possibilities that gonococci may contain *R* factors. They point out that, if clinical resistance is usually due to a single mutation producing resistance to a number of antibiotics, further resistance will not be prevented by the use of combinations of any of those involved.

P. M. Waterworth

Pathogenesis and Immunology of Experimental Gonococcal Infection: Virulence of Colony Types of *Neisseria gonorrhoeae* for Chicken Embryos
BUMGARNER, L., and FINKELSTEIN, R. A. (1973) *Infect. and Immun.*, **8,** 919

This paper extends the work of Buchanan and Gotschich on infectivity of Kellogg colony types using a chicken embryo model, which the authors were unable to confirm. They went on to show that types T1 and T2 colonies inoculated intravenously into 11-day-old embryos proved highly virulent, compared with types T3 and T4, assessed by reduced clearance and increased multiplication. This was independent of inherent toxicity in killed gonococci and of differences in sensitivity to cidal effects of embryo blood. The authors note significantly that circulating organisms are predominantly extracellular in this model; furthermore, the age of the embryos has a profound effect on their susceptibility to gonococci. Protection was afforded by pre-treatment of the inoculum with either normal or immune rabbit serum, which was independent of bactericidal activity.

Brian Evans

Lymphocyte Transformation and Serum Agar Gel Diffusion of Rabbits immunized against *Neisseria gonorrhoeae* and *Neisseria catarrhalis* ESQUENAZI, V., and STREITFELD, M. (1973) *Canad. J. Microbiol.*, **19,** 1099

The authors investigated cell-mediated immunity to antigens of *N. gonorrhoeae* and *N. catarrhalis* in rabbits. They found that antigens obtained by sonication of these organisms stimulated lymphocyte transformation in hyperimmunized animals; considerable cross-reactivity occurred, but rabbits immunized to *N. catarrhalis* did not respond to all gonococcal antigens. Gel diffusion studies confirmed that some antigens are shared by the two organisms. However, although specific reactivity decreased during a 3–6 week observation period, cross-reactions with *N. catarrhalis* completely disappeared in this time.

Brian Evans

Gonococcicidal Action of Copper KENNEDY, M. (1973) *Med. J. Aust.*, **2,** 1029 (Letter)

Gonorrhoea (*Therapy*)

Single Dose Treatment of Gonorrhoea (1973) *Brit. med. J.*, **4,** 65 (Leader)

Rifampicin in the Treatment of Gonorrhoea WEITGASSER, H. (1973) *Clinica Europea*, **XII,** No. 2, p. 111

Single-dose Treatment of Gonococcal Urethritis in Males: Evaluation of Procaine Penicillin, Ampicillin, and Spectinomycin MITCHELL, R. W., and ROBSON, H. G. (1974) *Canad. med. Ass. J.*, **110,** 165

Treatment of Gonorrheal Urethritis with Spectinomycin Hydrochloride BROWN, J., TABERT, O., HANNA, J. D., and RENTIERS, P. L. (1974) *Canad. med. Ass. J.*, **110,** 173

Treatment of Male Urethral Gonorrhoea with Spectinomycin Hydrochloride (Trobicin) TUZA, F. L. C., and HATOS, G. (1973) *Med. J. Aust.*, **2,** 1090

Treatment of Gonorrhoea in Oregon by the Reporting Private Physician DELF, R. B., JR., and HOFELDT, R. L. (1973) *Hlth Serv. Rep.*, **88,** 601

Therapeutic Effectiveness of Trobicin in Gonorrhoeal Infection TURANOVA, E. N., MIRKHODZHAEVA, I. R., AFANASIEV, B. A., LACHMANOVA, A. P., YATSUKHA, M. V., GRACHEV, YU. I., and YASHKOVA, G. N. (1974) *Vestn. Derm. Vener.*, No. 4, p. 86

Non-specific genital infection

Oxytetracycline compared with Single-dose Therapy with Sulfametopyrazine/Streptomycin Sulphate in Non-gonococcal Urethritis in Males MAHONY, J. D. H., MCCANN, J. S., HARRIS, J. R. W., HOWE, J. G., and DOUGAN, H. J. (1974) *Brit. J. clin. Pract.*, **28,** 179

Patients attending the Venereal Diseases Clinic at the Royal Victoria Hospital, Belfast, with non-gonococcal urethritis were treated with either 500 mg. oxytetracycline 6-hrly for 4 days or 1 g. streptomycin sulphate intramuscularly and a single dose of 2 g. sulphametopyrazine orally. They were reassessed 10 to 14 days later. Of 48 men assessed after treatment with oxytetracycline, 41 (85 per cent.), and of 52 men treated with streptomycin/sulphametopyrazine, 32 (62 per cent.), showed no evidence of urethritis. Of twelve patients who failed to respond to oxytetracycline, nine were cured by streptomycin/sulphametopyrazine, and of twenty streptomycin/sulphametopyrazine treatment failures ten subsequently responded to oxytetracycline.

The authors suggest that, although oxytetracycline remains the treatment of choice for non-gonococcal urethritis, the streptomycin/sulphametopyrazine combination is a useful alternative which has the advantage of being given in one dose which is non-treponemicidal. *J. T. Wright*

T-mycoplasmas: Some Factors affecting their Growth, Colonial Morphology, and Assay on Agar

FURNESS, G. (1973) *J. infect. Dis.*, **128,** 703

Studies on the effect of certain factors on growth and colonial morphology with respect to agar assay of T-strain mycoplasmas were carried out. Five laboratory strains and five wild strains were studied, two of the laboratory strains in detail. The two laboratory strains grew better, giving typical rough colonies, of maximal size on T-agar (pH 6·0 to 6·5) containing 0·75 per cent. Ionagar in 3 per cent. trypicose soya broth with 10 per cent. unheated horse serum (urea content 20 mg./100 ml.). The rate of appearance of colonies was similar when incubated in 5 to 60 per cent. CO_2 in air, in CO_2, in N_2, and anaerobically, but slower under aerobic incubation. The concentration of urea was not critical, but high concentrations are toxic with alkaline pH. Colonial morphology and size are related to concentration, brand of agar, and volume of agar in the Petri dish, the volume of agar being critical for reproducible results in assays. Additions of Mg to the T-agar or increase in the concentrations of agar caused rough colony strains to produce 'fried egg' colonies. Excess Mg ions caused reversion of 'fried egg' colonies to rough. 1·5 to 2·0 per cent. Ionagar produced smooth colonies only, whilst Noble agar of equal gel strength did not, suggesting a further metabolite in Ionagar. Considerable inter-strain differences in ability to produce smooth and 'fried egg' colonies suggest varying growth requirements. Further data are needed to show that, as in *Mycoplasma pneumoniae*, smooth colonies are the typical colonies, with rough variants, and 'fried egg' intermediates. A relationship between the ability of wild strains to produce smooth colonies and pathogenicity is considered.

G. L. Ridgway

Interactions of TRIC Agents with Macrophages: Effects on Lysosomal Enzymes of the Cell TAVERNE, J., BLYTH, W. A., and BALLARD, R. C. (1974) *J. Hyg. (Lond.)*, **72,** 297

Laboratory Diagnosis of Trachoma: a Collaborative Study SCHACHTER, J., MORDHORST, C. H., MOORE, B. W., and TARIZZO, M. L. (1973) *Bull. Wld Hlth Org.*, **48,** 509

Reiter's disease

A Fatal Case of Reiter's Disease complicated by Amyloidosis CAUGHEY, D. E., and WAKEM, J. (1973) *Arthr. and Rheum.*, **16,** 695

Death, when reported in the early stages of Reiter's disease, has been due to massive gastric haemorrhage from gastric ulceration and submucosal necrosis. A fatal case of Reiter's disease in an 18-year-old male was seen at the Department of Rheumatology, Middlemore Hospital, Auckland, New Zealand. Although the patient had melaena shortly before admission the stomach was normal at autopsy 9 months later. There were amyloid deposits in the spleen, kidney, lymph nodes, and small and large bowel.

6 months before admission to hospital the patient had had diarrhoea which subsided without treatment in 2 months. He developed lumbar pain 1 month later. He now had sexual intercourse, having abstained from it for 8 months. This resulted in urethritis a week later. He developed conjunctivitis in 2 months and this was followed by polyarthritis which necessitated admission to hospital. A fortnight later he developed a generalized psoriasiform rash. *X* rays were normal and so were the laboratory investigations apart from a raised erythrocyte sedimentation rate and leucocytosis. Synovial fluid from the left knee showed 30,000 leucocytes/cu.mm. and was sterile on culture.

Treatment with penicillin, streptomycin, alloxoprin, methadone, and phenylbutazone led to a temporary remission. Prednisone and indomethacin were added and later lincomycin and tetracycline. Some improvement resulted, but in view of a further exacerbation azathioprine was commenced.

After a short remission, diarrhoea with mucus occurred. There was also an exacerbation of the rash and synovitis and the development of paralytic ileus. Sigmoidoscopy showed pus in the rectum but no ulceration. Further deterioration necessitated a laparotomy at which a colectomy with ileostomy was performed. Death occurred 6 days later.

The authors consider this to be a case of superficial ulceration of the colon secondary to amyloid deposits complicating Reiter's disease. They draw attention to an almost identical case reported by other workers and conclude that steroid therapy may have contributed to the development of amyloid in both cases.

C. S. Ratnatunga

Acute Anterior Uveitis and HL-A 27 BREWERTON, D. A., CAFFREY, M., NICHOLLS, A., WALTERS, D., and JAMES, D. C. O. (1973) *Lancet*, **4,** 994

Reiter's Disease and HL-A 27 BREWERTON, D. A., CAFFREY, M., NICHOLLS, A., WALTERS, D., OATES, J. K., and JAMES, D.C.O. (1973) *Lancet*, **4,** 996

Human lymphocyte antigens (HL-A) are cell surface markers present on lymphocytes and most other nucleated cells. They are genetically inherited components determining histocompatibility, and recently correlations have been observed between the presence of some of these histocompatibility antigens and the occurrence of certain disease processes, for example, ankylosing spondylitis.

These papers, from the Westminster Hospital, London, report on significant correlations between the finding of one of the histocompatibility antigens, HL-A 27, and two disease states, acute anterior uveitis and Reiter's disease. Acute anterior uveitis may be associated with several systemic disorders, but its cause is unknown. Reiter's disease is also of unknown aetiology; its early stages are preceded by urethritis or dysentery and some of its late clinical manifestations may closely resemble those of ankylosing spondylitis. When lymphocytes from patients with acute anterior uveitis and Reiter's disease were examined for HL-A antigens, a correlation was found between the presence of HL-A 27 and disease. It was present in 26 of fifty patients with acute anterior uveitis and in 25 of 33

patients with Reiter's disease, compared with only eight of 29 and three of 33 patients in two control groups.

It is not known how the histocompatibility antigens are involved in those diseases where a close correlation is found. These findings may show that a factor in pathogenesis is genetically determined and its inheritance closely associated with the histocompatibility system. Two possible mechanisms have been suggested. In the first, the histocompatibility antigens so closely resemble those of a foreign invader and putative aetiological agent that the host cannot produce a suitable immune response. In the second, histocompatibility antigens are markers of gene complexes and co-inherited with those controlling specific immune responses, including those to infecting agents.

It is clear that the finding of such correlations between acute anterior uveitis and Reiter's disease on the one hand and histocompatibility antigens on the other may contribute towards an understanding of these complex and enigmatic diseases, and no doubt further correlations will be sought and found. *P. Reeve*

Candidosis

Formation of Germ Tubes by *Candida albicans* in Sheep Serum and Trypticase Soya Broth JOSHI, K. R., BREMNER, D. A., GAVIN, J. B., HERDSON, P. B., and PARR, D. N. (1973) *Amer. J. clin. Path.*, **60,** 839

Many fluids are used in the laboratory for the rapid development of diagnostic 'germ tubes' by *Candida albicans*. These include serum and plasma (human, bovine, horse, and pig), tissue culture fluids, and egg albumen. The authors describe the use of sheep serum and trypticase soya broth for this purpose, with particular reference to inoculum size and percentage of germ tubes produced. *B. M. Partridge*

***Candida albicans* Antibodies in Candidiasis** ANDERSEN, P. L., and STENDERUP, A. (1974) *Scand. J. infect. Dis.*, **6,** 69

Genetic Relatedness of *Candida albicans* to Asporogenous and Ascosporogenous Yeasts as reflected by Nucleic Acid Homologues SEGAL, E., and EYLAN, E. (1974) *Microbios*, **9,** 25

Effect of Candicidin on Fungal Flora of the Gastrointestinal Tract BODEY, G. P., ADACHI, L., and JONES, V. (1974) *Curr. Ther. Res.*, **16,** 207

Genital herpes

Neonatal Encephalitis following Maternal Genital Herpesvirus Infection HARE, M. J. (1974) *Proc. roy. Soc. Med.*, **67,** 15

A case is described of a 17-year-old negro primigravida in which, after abdominal section because of foetal distress, HVS Type I was isolated from vulval vesicles on the third day of the puerperium, the lesions having been noticed before term but having been considered to be vulval furunculosis.

The female infant, asphyxiated at birth, developed fever of 39°C. at 18 days; lumbar puncture showed no bacteria, 340 leucocytes/mm.^{3}, lymphocytes predominating, low sugar, and high protein levels. Convulsions occurred at 21 days and specific antiherpes IgM was found in the serum. Treatment was started with intravenous idoxuridine, but the child died at 25 days.

Autopsy revealed multiple areas of degeneration in the brain and spinal cord with cellular patterns and inclusions typical of herpesvirus infection. Herpes antigens were found when brain sections were stained by a two-stage immunofluorescent technique.

The author points out the relatively uncommon occurrence of HVS I genital infection, but the high infant mortality with either HVS I or HVS II. After mentioning the difficulty in diagnosing herpetic cervicitis, he advocates elective Caesarean section in cases of HVS infection in late pregnancy. *M. A. Waugh*

Herpes Simplex of Penis and Anus HUTTON, R. D., and STEGMAN, S. J. (1973) *Arch Derm.*, **108,** 580

Treatment of Genital Herpes (1974) *Brit. med J.*, **2,** 461 (Leader)

Effect of Canavanine on Herpes Simplex Virus Replication BELL, D. (1974) *J. gen. Virol.*, **22,** 319

Other sexually-transmitted diseases

Granuloma Inguinale of the Orbit with Bony Involvement ENDICOTT, J. N., KIRKCONNEL, W. S., and BEAM, D. (1972) *Arch. Otolaryng.*, **96,** 457

Bone involvement and extragenital lesions of granuloma inguinale each occur in 6 per cent. of reported cases.

The authors, from the Departments of Otolaryngology and Ophthalmology at the University of South Florida Medical School, shared an interest in an extragenital lesion occurring in a 44-year-old negress. A swelling, lateral to the orbit, developed to involve the forehead and face. Further deterioration resulted in exophthalmos and the appearance of a fungating, velvety, red-brown mass 2 × 1 cm. just outside the eye. There was also a bubo on the right side and an intravaginal fistula running to an inguinal ulcer on the left side.

Donovan bodies were seen in smears taken from the groin and orbit, Hb 10·1 g./100 ml.; W.B.C. 6,700/cu. mm.; serum protein 10·2 g./100 ml.; VDRL and FTA-ABS tests positive.

A necrotic granuloma was found in the temporal lobe at operation, which was excised in conjunction with eroded bone adjacent to the superior orbital fissure. Oxytetracycline, 500 mg. four times, daily, was given for over a fortnight. It was possible to confirm the complete eradication of the disease as the patient died 5 months later and came to necropsy. Widespread peritonitis was discovered, possibly the result of a vaginal-peritoneal fistula, though this could not be demonstrated. *A. L. Hilton*

Public health and social aspects

International Contact Tracing in Venereal Disease WILLCOX, R. R. (1973) *WHO Chron.*, **27,** 418

Main Results of Research on the Problem of the Scientific Bases of Dermatology and Venereology for 1972
TURANOV, N. M., STUDNITSIN, A. A., SLUCHEVSKAYA, M. P., and POZDNYAKOV, O. L. (1974) *Vestn. Derm. Vener.*, No. 5, p. 3

Control of Venereal Diseases in the Uzbek SSR TURSUNOV, N. T., GOLOSOVKER, A. M., and TAREEVA, V. YA. (1974) *Vestn. Derm. Vener.*, No. 4, p. 62

Miscellaneous

Pearly Penile Papules Acral Angiofibromas
ACKERMAN, A. B., and KORNBERG, R. (1973) *Arch. Derm.*, **108,** 673

The authors suggest that Pringle's appellation 'adenoma sebaceum' is a misnomer and that pearly penile papules (hirsutoid papilloma of the coronal margin of the glans penis) should be considered to share histological features with other acral angiofibromas, subungual and periungual fibromas, fibrous papules of the face, acquired acral fibrokeratomas, and oral fibromas. They report biopsy specimens on five patients aged 20 to 43 years.

The epidermis showed a laminated cornified layer, with a prominent granular zone, increase in epidermal melanocytes and flattening of epidermal rete ridges with some abnormal pattern of collagen fibres.

In the dermis the stellate cells resembled the dendritic melanocytes of the epidermis, and there were eosinophilic and basophilic inclusion bodies in the stellate cell nuclei. It was hyperplastic, and infiltration with mast cells, plasma cells, lymphocytes, and histiocytes was found.

M. A. Waugh

Webbing of the Penis NAJJAR, S. S. (1974) *Clin. Pediat. (Philad.)*, **13,** 377

The Sexually Transmitted Infections JOSEY, W. E. (1974) *Obstet. and Gynec.*, **43,** 465

Sexual Transfer of *E. coli* Urinary Tract Infection ORKAN, E., and GORDON, R. L. (1974) *Harefuah*, **86,** 80

Trimethoprim in the Treatment and Long-term Control of Urinary Tract Infection
KASANEN, A., TOIVANEN, P., SOURANDER, L., KAARSALO, E., and AANTAA, S. (1974) *Scand. J. infect. Dis.*, **6,** 91

Sexual Acquisition of Arthritic Disease (1974) *Med. J. Aust.*, **1,** 379 (Comments)

Simultaneous Affection by Lichen Ruber Planus of the Buccal and Genital Mucous Membranes VASKOVSKAYA, G. P., and MIRKHODZHAEVA, I. R. (1974) *Vestn. Derm. Vener.*, No. 4, p. 25

Treatment of Recurrent Vaginitis BARRIER, J. (1974) *Rev. franç. Gynéc.*, **69,** 201

Bacteroides in Gynaecological Infection CRAFT, I., GHANDI, F., and HARDY, R. (1974) *Lancet*, **1,** 677 (Letter)

Torsion of the Testis STAEHLER, G. (1974) *Münch. med. Wschr.*, **116,** 953

Epidemiology and Prevention of Tumours of the Testicle
WEISSBACH, L., BRÜHL, P., and VAHLENSIECK, W. (1974) *Münch. med. Wschr.*, **116,** 957

Transpubic Repair of Membranous Urethral Strictures
WATERHOUSE, K., ABRAHAMS, J. I., CAPONEGRO, P., HACKETT, R. E., PATIL, U. B., and PENG, B. K. (1974) *J. Urol. (Baltimore)*, **111,** 188

Studies on the Pathology of Prostatitis. A Search for Prostatic Infections with Obligate Anaerobes in Patients with Chronic Prostatitis and Chronic Urethritis
NIELSEN, M. L., and JUSTESEN, T. (1974) *Scand. J. Urol. Nephrol.*, **8,** 1

Mechanical Hydrovibrational Treatment of Postinflammatory Urethral Stenosis
PSYUK, S. K., PSHENICHNY, N. F., SHEVCHENKO, N. M., and MAKSAEV, V. I. (1974) *Vestn. Derm. Vener.*, No. 5, p. 84

Use of Disposable Anaesthetic Lubricant (Instillagel) for Catheterization of the Urethra
GÜNTHER, J. (1974) *Münch. med. Wschr.*, **116,** 959

Treatment of Urethral Strictures with Internal Urethrotomy and 6 Weeks of Silastic Catheter Drainage CARLTON, F. E., SCARDINO, P. L., and QUATTLEBAUM, R. B. (1974) *J. Urol. (Baltimore)*, **111,** 191

Treatment of Urethral Strictures by Intralesional Injections of Steroids, Internal Urethrotomy, and Intubation with Silastic Catheter RIVERS, T. A., CAMPBELL, J. T., and GREENE, L. F. (1974) *J. Urol. (Baltimore)*, **111,** 502

The NBT Test in Behçet's Syndrome (1974) *New Engl. J. Med.*, **290,** 915 (Letter)

HL-A5 and Behçet's Disease
OHNE, S., AOKI, K., SUGIURA, S., NAKAYAMA, E., ITAKURA, K., and AIZAWA, N. (1973) *Lancet*, **2,** 1383 (Letter)

Transvestism and Transsexualism (1974) *Brit. med. J.*, **2,** 289 (Leader)

Tetracyclines after 25 Years (1974) *Brit. med. J.*, **2,** 400 (Leader)

Survey of Venereal Disease Treated by Manitoba Physicians in 1972 SCATLIFF, J. N. R. (1974) *Canad. med. Ass. J.*, **110,** 179